BLANKOM®

Professional Headend Solutions

Operating instructions

8 pole IP-/ ASI-TV Modulator

IP/ SFP/ ASI (MPEG2) → ATV (8x AM)

PALIOS-IPM2
Part N°: 5105.01

...Setting Signals

Contents

1. Safety and operating instructions

When assembling, starting-up and adjusting the modules, it is necessary to consider the system specific references in the manual instruction.

The modules may only be installed and started up by authorized technical personnel. There are only permitted the mounting styles indicated in the quick start guide, which is included each module.

When assembling the modules into the receiving points, the adherence of the EMC regulations is to be ensured.

The assembly and wiring have to be done without voltage. For installation, only the supplied accessories (DIN rail clip with screws and 19“ accessories) may only be used.

All active modules may only be operated with the power supply HELIOS, HELIOS-P1 or QUASARIOS. To supply the module only the attached accessory cables are used.

The mains voltage and the operating voltage of the modules working by DC have to be in complience to the operating parameters described in the technical data.

With all work the defaults of the DIN EN 50083 have to be considered. Especially the safety relevant execution of the DIN EN 60728-11[4] is necessary.

The unit should be mounted only vertically. The ventilation slots as well as the circulation perforation of the modules must be kept absolutely free.

If installed in mounting cabinets a adequate heat circulation must be guaranteed. The mounting in closed cabinets without air exchange is **not allowed**.

For **DIN rail mounting** is important to note that between the heat sink and a neighboring building, a distance of 2 cm is required. If the modules mounted on top of each, so to observe a distance of 20 cm from the bottom edge of the top module to top edge of the lower module.

For **19“ mounting** all devices in the rack must be fitted with 19“ Edge Guide. The sole panel mounting is not enough! Furthermore, the operation of a fully occupied rack is only allowed with an underlying 1-U fan box (at least 3 fans, 176 mm deep).

WEEE-Reg.-Nr. DE 50389067

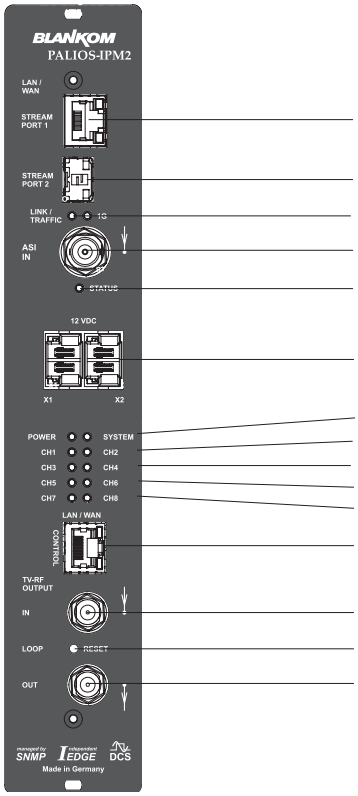
2. Device variants

PALIOS-IPM2	5105.01	IP/ SFP/ ASI (MPEG2) → ATV (8x AM)

3. General

The Smart Business Line (SBL) is a modern head end system, that is distinguished by its modular and compact design. A userfriendly operating concept facilitates setup, configuration and maintenance of the system.
The PALOS-IPM2 module selects 8 programs from up to 8 adjacent IP transport streams or from an ASI transport stream and converts these into analoge TV signals to transmit it in cable networks. In this case, a maximum of 8 analog television channels are generated from the adjacent MPEG2 transport streams.

4. Front view



Stream port 1

Stream port 2 (SFP, redundant input)

Stream port 2 LED's "LINK/ TRAFFIC" + "1G"

ASI input

ASI LED "Status"

Power connections

Status LED "POWER"/ "SYSTEM"

Status LED channel 1/ channel 2

Status LED channel 3/ channel 4

Status LED channel 5/ channel 6

Status LED channel 7/ channel 8

Control port (LAN/ WAN)

Output coupler "input"

Reset button

Output coupler "output"

Independent EDGE

DCS

managed by SNMP

5. Functional description

The module receives a data stream via Gigabit Ethernet and can receive 8 transport streams from the included IP encapsulated transport streams. The 8 transport streams are further processed in 8 MPEG2 decoders. The analogue TV modulation and the freely adjustable up-converting in the cable network range (45 ... 862 MHz) is carried out by a high-performance FPGA.
The eightfold modulator is adjacent channel compatible. A highly-clocked digital to analogue converter (DAC) is responsible for the spectrally pure output of the cable signal. After amplification and sum level adjustment, the cable signal is coupled through a directional coupler to the output jacks.

6. Meaning of the LED's

6.1 LED's at the 10/ 100/ 1000 Mbit stream port 1

Designation, colour	Status	Meaning of display
GbE connect LED, green	permanently on	only illuminated when the cable connecting is made a GbE connection (does not light up at a 10/ 100 Mbit connection)
	off	no GbE connection
Connect/ data LED yellow	permanently on	cable connection is established
	flashing	data is received
	off	no cable connection

6.2 LED's at the 10/ 100/ 1000 Mbit stream port 2

Designation	Colour	Status	Meaning of display
1G	green	permanently on	only illuminated when the cable connecting is made a GbE connection (does not light up at a 10/100 Mbit connection)
		off	no GbE connection
LINK/ TRAFFIC	amber	permanently on	cable connection is established
		flashing	data is received
		off	no cable connection

6.3 LED at the ASI socket

Designation	Colour	Status	Meaning of display
STATUS	green	permanently on	ASI transport stream is present
		flashing	no ASI transport stream

6.4 Status LED's

Designation	Colour	Status	Meaning of display
POWER	green	permanently on	Module is on.
	amber	permanently on	Module is in standby
		off	Module is off, operating voltage is not applied.
SYSTEM	green	permanently on	Module is ready for work.
		flashing	Software update is running.
	amber	permanently on	Temperature is high, fan is already activated.
		flashing	Temperature is critical. The device will no longer ensured or forced shutdown.
		off	Module is not ready for work.
CH 1 ... CH 8	green	permanently on	Channel operates without error.
	amber	permanently on	Error warnings, depending on signal: - input and/ or output without sync - input sync, but in bad quality (eg. mosaic effect in the TV picture)
		flashing	Hardware is faulty.
		off	Channel is off.

6.5 LED's at the 10/ 100 Mbit control port

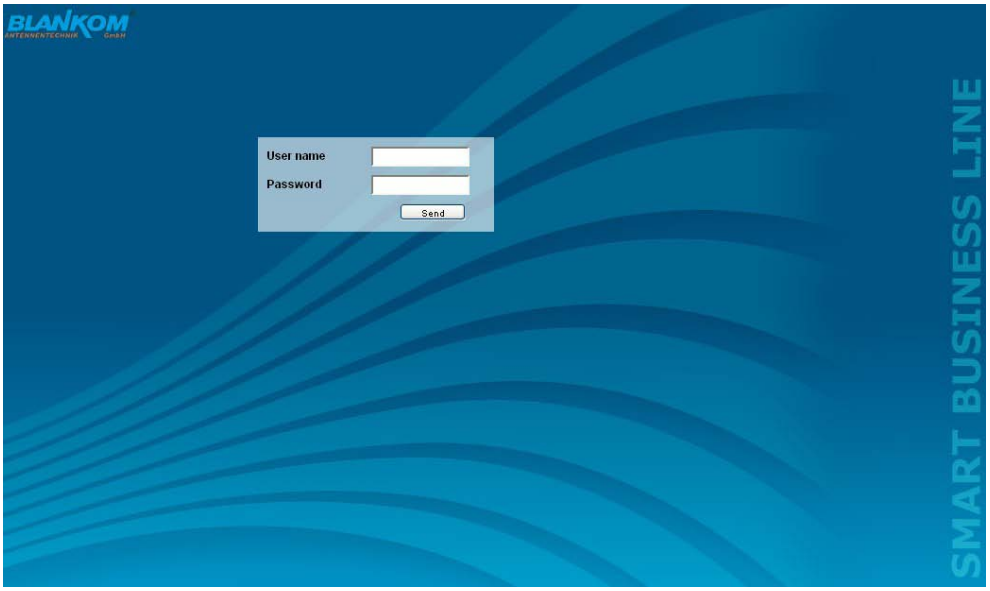
Designation, colour	Status	Meaning of display
Connect LED, yellow	permanently on	Network cable is connected.
	off	No cable connection
Data LED, green	flashing	The data exchange.
	off	No data exchange

7. Adjusting by web server

7.1 Network connection to the computer

System requirements:
- PC/ laptop with 10/ 100 Mbit Ethernet interface
- Internet browser (e.g. Windows Internet Explorer), which accept JAVA script.

Setup the connection:
The PALIOS-IPM2 module has to connected to PC network using an Ethernet cable.The IP address of the PALIOS-IPM2 module is 192.168.1.100 on delivery. If several SBL modules should be controlled or adjusted via an Ethernet switch, each module must first be converted **individually** to its provided IP address within the network. To that the address of the network port on the PC (temporary) must be adapted to the IP address of the SBL module (subnet mask: 255.255.255.0, IP address: 192.168.1.XXX, where XXX is not the same as the corresponding value of the SBL module IP address).
After the network configuration of the module(s) the IP address of the control PC is converted to the provided IP address and the modules can be accessed through the browser with their new IP addresses. First appears the login window, if the password and user testing were activated on the setup page (see chapter 7.2.5):



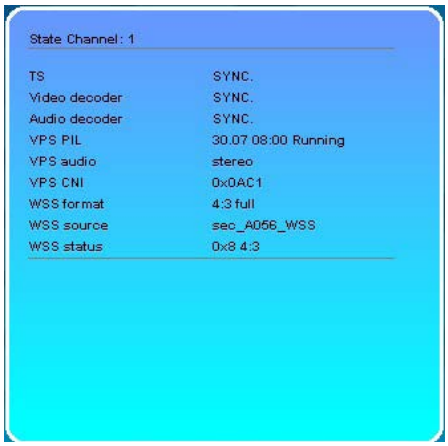
After successful registration or successful connection establishment without password (default setting) the start page of the module is charging.

In this module, the setting is made solely in expert mode. In addition, the language selection is possible between German and English top right.

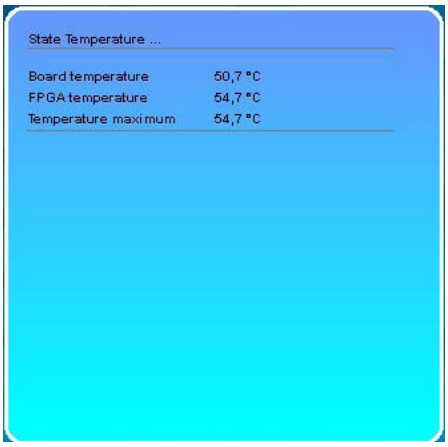
7.2 Setting of individual parameters

In the operating mode via the website, you can set certain parameters of the module or perform configurations on the module or the user interface. The various setting menus can be selected in the navigation tree on the left side. The setting is supported by an online help. Touching the parameters by the mouse in the lower part of the site an orange colored text box appears with explanations for each parameter. By setting in the “Setup“ menu (see chapter 7.2.5) may be selected so that the help appears in the status bar of your browser. If appropriate setting changes in the browser options are necessary.

In addition, in the lower part of the navigation tree status information for the module is displayed. By changing the setup menu, the status information can also be moved to the right (see also chapter 7.2.5). All 8 channels are listed individually. A green LED symbol before the “channel ...“ means that both input and output are synchronized and that the channel operates without error. An orangecolored symbol indicates that an error has occurred in that channel. An overview of the status of various parameters of the channel is obtained by double-clicking the corresponding channel. In the browser interface, a status overview appears.



A transparent LED symbol means that the channel is not programmed and set, or the RF output is turned off. Furthermore, we obtain the same way status information about the system parameters. In this case too an orange-colored LED symbol displays an error state during which a green LED symbol displays error-free working condition. The detailed status information is available by double clicking the name field.



The last display point indicates the connection status between the network interface and the module. Green means, that the connection is established. A transparent LED light indicates that there is no connection or the connection is failed.
Settings with the selection box or input fields are taken over by pressing the “send“ button and stored permanently, and the PALIOS-IPM2 module is set on these values after a restart too. Settings with the click box are usually performed immediately but not stored in memory, so they would be lost on a possible restart of the module. To save these settings the “send“ button must be pressed.

7.2.1 Menu ”Overview”

This page provides a status overview of the 8 channels. If a channel is working without errors, “SYNC“ is displayed. If errors occur you will see an “Error“ display. If the RF power is switched off the display „Off“ appears behind the respective channel.

In addition, under the status window there is the head end display. There all SBL modules are listed, which are in the same network and which have been selected to the head end in the setup menu (see 7.2.5). This is significant because functions over all modules such as the NIT processing between QAMOS/ QAMOS-4CI modules can be extended to all components of the head end. The individual components of a head end are listed with their IP address, which is also provided with a link to this address, so you can switch easily to the next module. If no head end was created, a “Search“ button appears, which forwards to the setup menu and scans the network for other SBL modules. Then all available modules are listed, can be selected and added to the head end.
By clicking the “Logout“ button the user logs out of the module and the login window appears. By pressing the “Standby“ button the module is set into standby, which is displayed by a amber illuminating POWER LED on the module. The “Standby“ button will be replaced by an “ON“ button, and by pressing of that the module will be set on.

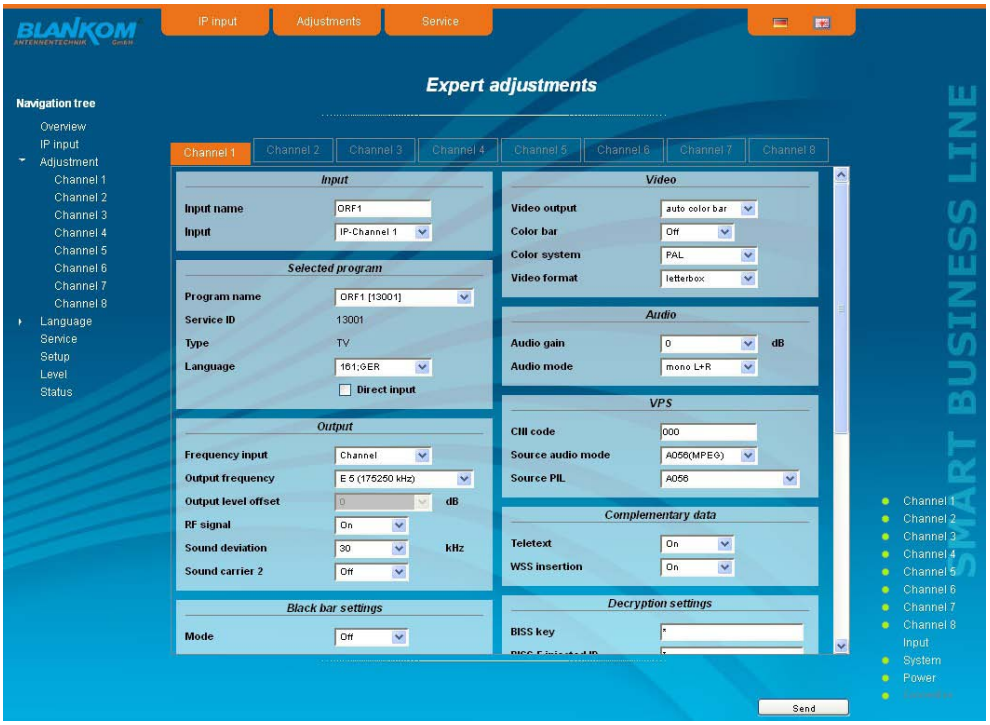
7.2.2 Menu “IP Input”

In this menu there is the network configuration of the IP input section of the 8 IP transport streams from which then the 8 desired programs for transmitting can be selected.

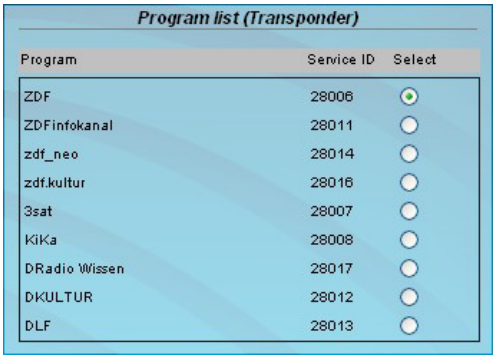
First the network settings for the two stream ports are to configure. It should be noted that the stream port 2 is available only after enabled software option (see Section 7.2.5). Per port, the IP address, subnet mask and gateway are to be entered.
The next step is to configure the setup parameters of the 8 IP input transport streams. Moreover, its IP address, port and transport protocol (UDP or RTP) can be entered. Everything is confirmed by pressing the “send“ button.
If not all 8 ports are used, then the unused ports can be disabled by entering the IP address 0.0.0.0.

7.2.3 Menu ”Adjustment”

In this menu, the settings of the module are made. Each channel can be adjusted individually according to individual requirements. The channel selection may be either left in the navigation tree or above the set-up tables.

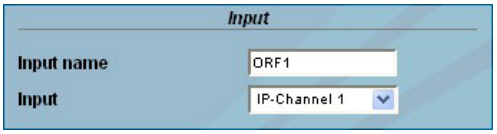


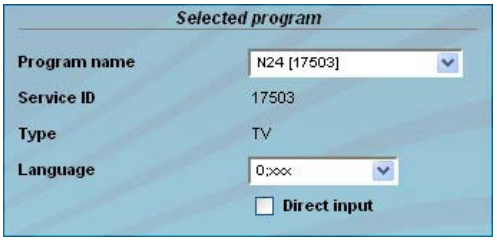
The following parameters are adjustable:

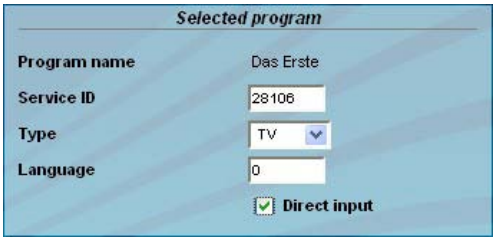


Program list (Transponder)

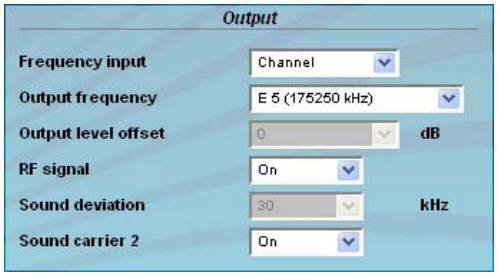
If “Program selection with select box“ in chapter “GUI settings“ is deactivated (see also chapter 7.2.5), it appears this table for program selection. All programs of the selected transponder are listed with name and service ID. The selection of the program is done by marking of the respective select box. The program name and the other parameters of the program are adopted automatically. In this case the program name in the menu “Selected program“, variant 1 is not selectable.







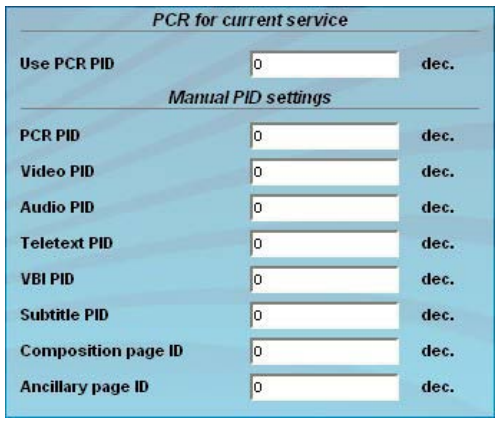
Input	input parameters of the channel
Input name	name of the program, editable
Input	selection: IP input transport stream (TS) 1 ... 8, ASI TS
Selected program	variant 1: program selection menu
Program name	selection of the program from the program list of the transponder of the selected IP TS
Service ID	displays the service ID of the selected program
Type	displays the type of the program
Language	selection of the available language
Direct input	selection: selection menu, direct input (see be low)
Selected program	variant 2: direct input
Program name	displays the name of the program, which was selected in the input menu
Service ID	input of the service ID of the requested program, adjustment range: 0...65535
Type	selection of the program type: TV, Radio
Language	input of the language n°, adj. range: 0..255



Output — output parameters of the channel

Frequency input	selection: channel, frequency *
Output frequency	selection from channel table/ input in kHz *
Output level offset	display of the level offset **
RF signal	selection: On, Off
Sound deviation	selection: 30, 50 kHz ***
Sound carrier 2	selection: On, Off

* If selected at the frequency input "channel", so you can select the output frequency in the pre-selected channel spacing (see chapter 7.2.5). If, however, at the frequency input "frequency", then the output frequency is selectable in kHz steps.
** Adjustment of the offset of each channel to the basic level, see chapter 7.2.5
***Only selectable, if sound carrier 2 is set "Off". If sound carrier 2 is set "On", the sound deviation is permanently 30 kHz



PCR for current service*

Use PCR PID — adjustment range: 0..8190

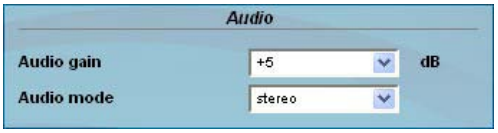
Manual PID settings*

PCR PID	adjustment range: 0..8190
Video PID	adjustment range: 0..8190
Audio PID	adjustment range: 0..8190
Teletext PID	adjustment range: 0..8190
VBI PID	adjustment range: 0..8190
Subtitle PID	adjustment range: 0..8190
Composition page ID	adjustment range: 0...65535
Ancillary page ID	adjustment range: 0...65535

* The menu of the manual PID setting only appears, if the respective box is clicked on in the "Setup" menu, chapter "GUI settings" (see also chapter 7.2.5). **The functionality is currently not supported.**

Video — setting of the video parameters

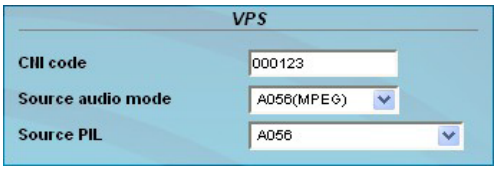
Video output	selection: On, auto Off, auto colour palette bar
Color bar	selection: On, Off
Color system	selection: PAL, SECAM, NTSC
Video format	selection: letterbox, center cut, 1:1, pillarbox, 4:3 vertical cut, 20:9 letterbox



Audio — setting of the audio parameters

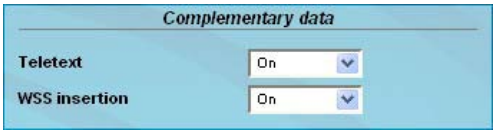
Audio gain	adjustment range: +6...-20 dB
Audio mode	selection 1: mono L, mono R, dual, dual invers, stereo, auto ** selection 2: mono L, mono R, mono L+R, auto ***

** if sound carrier 2 "On"
*** if sound carrier 2 "Off"



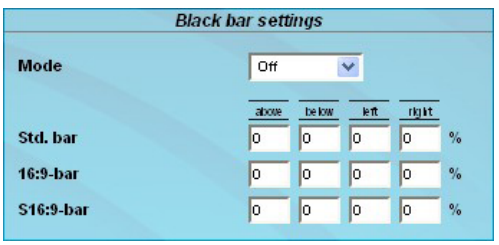
VPS — setting of the VPS parameters

CNI code	adjustment range: 0x000…0xFFF (hexadec.)
Source audio mode	selection: MPEG, A056(MPEG)
Source PIL	selection: A056(PDC), A056, PDC, TimerControlCode



Complementary data

Teletext	selection: On, Off
WSS insertion	selection: On, Off

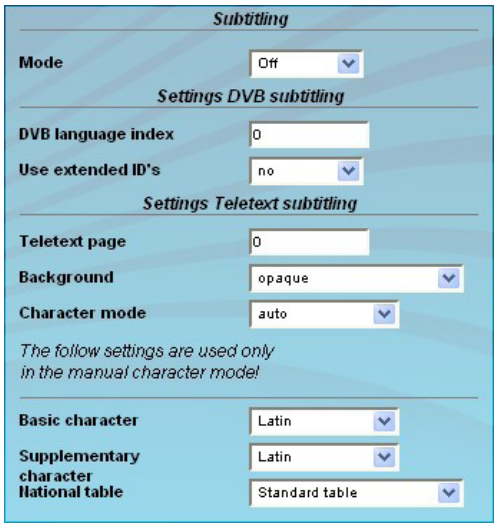


Black bar settings *

Mode — selection: On, Off

The width of the bar can be selected in % related to standard 4:3 format. Different values for 16:9- and special 16:9 format can be adjusted.
Note:
In certain settings it can occur in picture distortion. The adjustment values (in %) in these cases are slightly to change up or down until there are no disturbances occur more.

* only available, if "Black bar" option is enabled (see chapter 7.2.5)



Subtitling**** adjustment of the parameters

Mode selection: Off, Teletext, DVB

Settings DVB subtitling

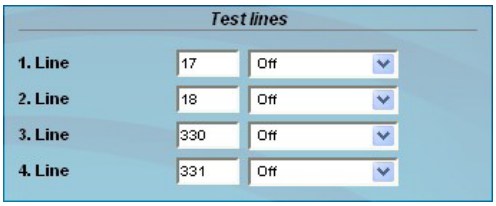
DVB language index adjustment range: 0...255
Use extended ID's selection: yes, no

Settings teletext subtitling

Teletext page adjustment range: 0..65535
Background selection: opaque, semi-transparent, transparent, black transparent
Character mode selection: auto, manual

The following settings are only used in the manual character mode:
Basic character selection: Latin,Cyrillic-1,Cyrillic-2, Cyrillic-3, Arabic, Greek, Hebrew
Supplementary character selection: Latin, Cyrillic, Arabic, Greek, Hebrew
National table selection: standard table, alternative table, no country code, English, German, Swedish, Italian, French, Spanish, Czech, Rumanian, Polish, Estonian, Latvian, Serbian, Turkish, Danish

**** only available, if "Subtitling" option is enabled (see chapter 7.2.5)



Test lines**

The PALIOS-IPM2 offers the opportunity to output on up to 4 image lines test signals from the following selection: Off, CCIR 17, CCIR 18, CCIR 330, CCIR 331, Sin(x)/ x, Ramp. As a default, the provided lines 17, 18, 330 and 331 are offered. The image lines selection is editable, i.e. the test lines can be output on each image line in the range 1..625.

** only available, if "Test line" option is enabled (see chapter 7.2.5)

Decryption settings***

BISS key input of the 12-digit code in BISS mode 1 or of the 16-digit code in BISS mode E
BISS-E injected ID input of the 14-digit code in BISS mode E, no input in BISS mode 1

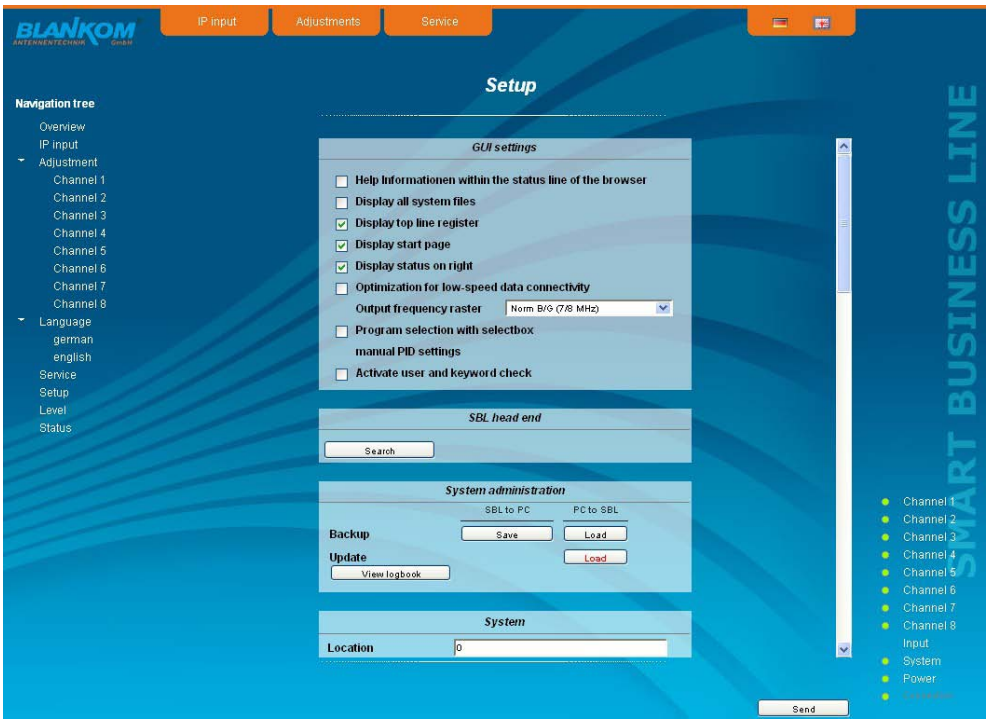
*** only available, if "BISS" option is enabled (see chapter 7.2.5)

7.2.4 Menu ”Language”

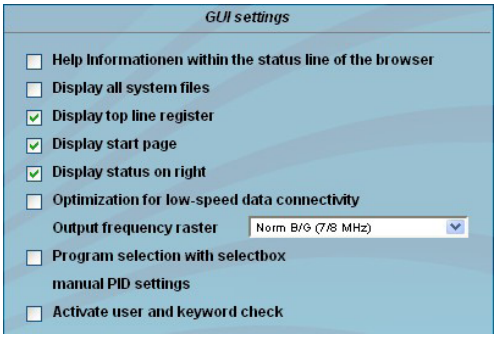
In this menu, the changeover of the user interface language is executed. You can choose between German and English. The transition can be made either to the left in the navigation tree in the subtree of the point “language“ or top right of the language selection box.

7.2.5 Menu ”Setup”

In this menu, various administrative and system settings are made



Specifically, the following can be configured:



GUI settings

Help information within the status line of the browser
By default, the online help is displayed in an orange text box at the bottom of the page. If you click this option, the help texts are displayed in the status bar of your browser. Depending on your browser sometimes has to be allows such use in the browser settings.

Display all system files
The default is, that the system files can be subjected to upload or download as a package under “Backup“ in the submenu “System administration“. If you click on this box, the system files are listed individually and can be individually subjected to an up- or download.

Display top line register
By default, the registers are shown in the upper part of the user interface, to move more quickly to the most frequently used menus. By removing the box marking the registers are hidden.

Display start page
The default is to start with the menu selection by the command buttons after every restart of the user interface (see chapter 7.1), where you can select the desired setup menu. If this item is disabled, this page will be skipped and you reach instantly the “Overview“.

Display status on right
By clicking on the box, the status of the channels or the system is shifted to the right of the user interface.

Optimization for low-speed data connectivity
By clicking the box the data volume of the browser pages are greatly reduced. So it is possible to adjust the module, if there ist only a low-speed connectivity (GSM). The restictions is: the size of all pictures is reduced.

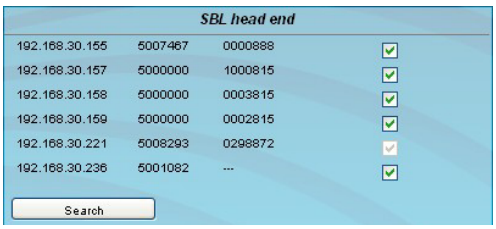
Output frequency raster
Possible is the selection between the standard B/G raster (7 or 8 MHz) and the D/K rasters. In case of D/K1 the sound carriers are at 6,5/ 6,25 MHz, D/K2 at 6,5/ 5,74 MHz and D/K3 at 6,5/ 6,74 MHz. Simultaneously in accordance with the selection, the group delay filter set for standard B/G or D/K.

Program selection with select box
If the box is deactivated, the program selection is done with the program list in the adjustment menu. Otherwise the program selection is done in the field “Selected program“ (see chapter 7.2.3).

manual PID settings*
By clicking the box the respective input box of each channel appears additionally in the menu “Adjustment“ (see also chapter 7.3.5). Default the input box is deactivated.

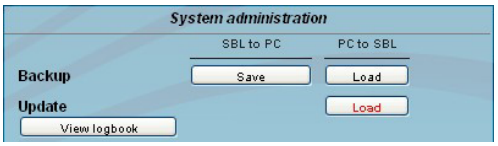
Activate user and keyword check
This selection is only available if you are logged in as administrator. If the box is disabled, the log-in is skipped after each GUI reboot. Otherwise, user login and password are required (see chapter 7.1).

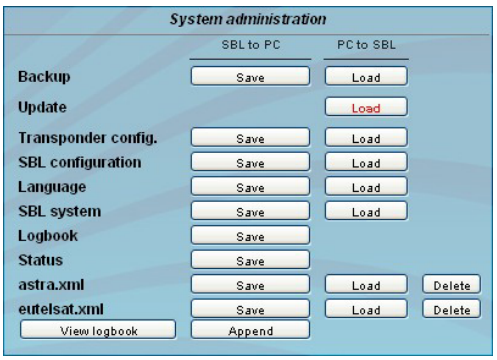
* **Functionality is currently not supported**

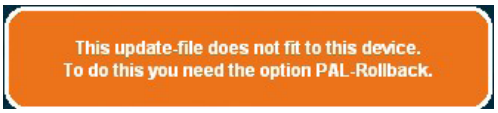


SBL head end

All SBL modules, which are located in the same network, are listet. By pressing the “Search“ button the list is updated. All marked modules belong to the head end and are displayed on the “Overview“ page.







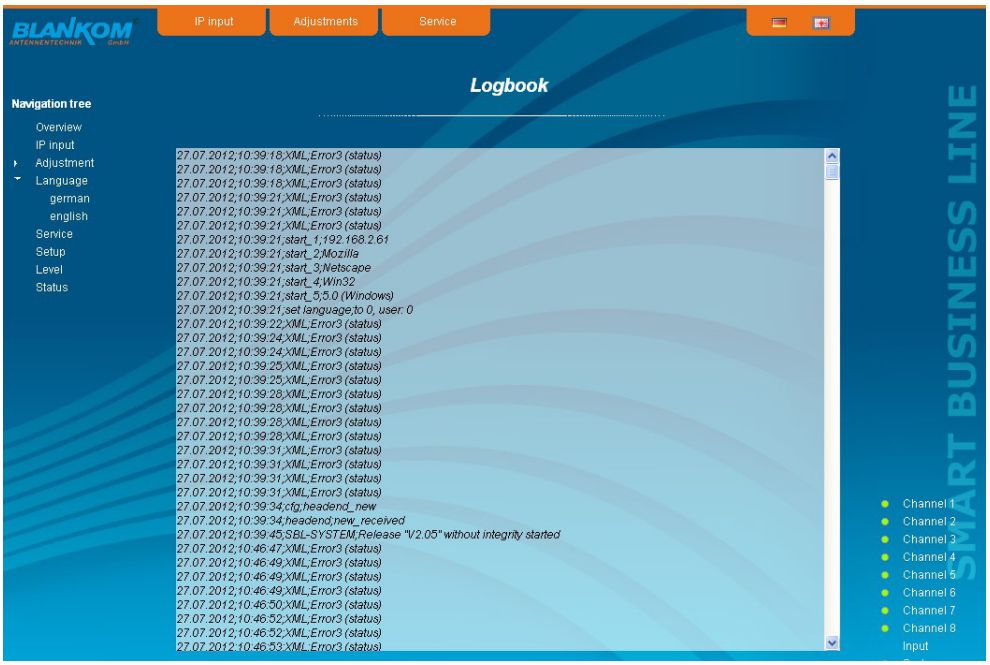
System administration

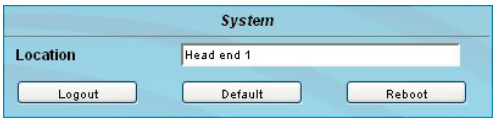
The default is displaying of the shortened list of files (top).

Backup
Here the system files can be loaded or saved as a package (except logbook. txt and status.xml). Thus, it is possible, for example in a simple way to copy the system files from a PALIOS-IPM2 module to another. If under “GUI setup“ “Display all system files“ is selected, the system files can also be loaded or saved separately (see figure below). Moreover, additional system files can be added.

Update
By clicking the “Load“ button, the internal software components can always be brought up to date.
If the “PAL-Rollback“ option is enabled, it is possible to convert the PALIOS-IPM2 module into a QAMOS-IP module via software update, what can be done reversed when needed as well. So after clicking the “Load“ button instead of the current PALIOS-IPM2 releases the current QAMOS-IP release is to select and then perform theupdate process.
If the option is not enabled, after selecting the QAMOS-IP releases appears opposite error message, so that accidental conversion is not possible.

Pressing the button “View logbook“ leads to an overview, in which all the processes have been documented since the start of the GUI. Each operation is listed by date, time and description. If operations have been executed, the logged on user, who initiated the action, is saved too. By pressing of the “Delete“ button all entries are deleted, when you are logged in as administrator.





System

Location — In this field a name for the PALIOS-IPM2 is be made to identify the module easily. This name appears on the top right of the website under the language selection box and is provided via SNMP with the question of the field: Iso(1)org(3). dod(6).internet(1).mgmt(2).mib.2(1).system(1). sysLocation(6).
system(1).sysLocation(6) geliefert.

Logout — restart the user interface

Default — delete the settings and reset to default values (including IP address), available only if you have logged in as administrator

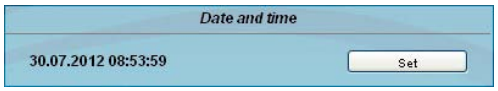
Reboot — restart of the PALIOS-IPM2 module

Enabling of

In this field, possible software options for the PALIOS-IPM2 module can be enabled. The registration code must be entered in the input field and by pressing the “Send“ button the option will be activated. Activated options are displayed in black, inactive are grayed out.

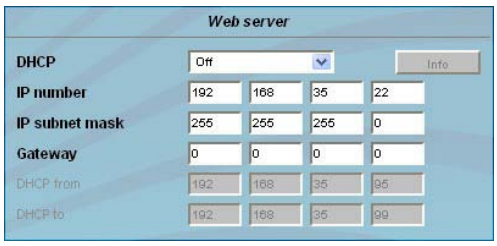
note

To convert a PALIOS-IPM2 into a QAMOS-IP, after switched to free “PAL roll back“ option,the update process can be performed (see System administration → update).



Date and time

Clicking on the “Set“ button, the date and time will be set to that of the PC.

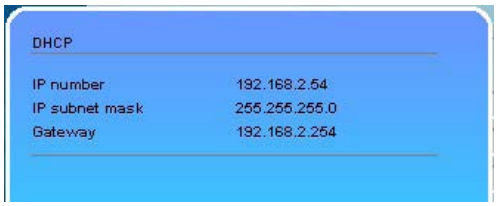


Web server

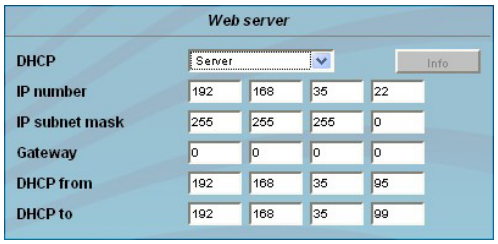
This setting appears only when you are logged in as administrator, so also has the authority to make administrative changes.
The PALIOS-IPM2 supports the DHCP functionality. There DHCP-Client is factory default. Note, that after each factory reset the PALIOS-IPM2 is set “DHCP-Client“.

If the **DHCP functionality** is set to **“Off“**, in the appropriate fields the IP number, subnet mask and gateway can be manually entered and then the settings of the PALIOS-IPM2 module are adapted to the network.

If the module is set as **“DHCP-Client“**, so it is automatically obtained on the network an IP address from the DHCP server. The manual network settings are grayed out and are therefore disabled.



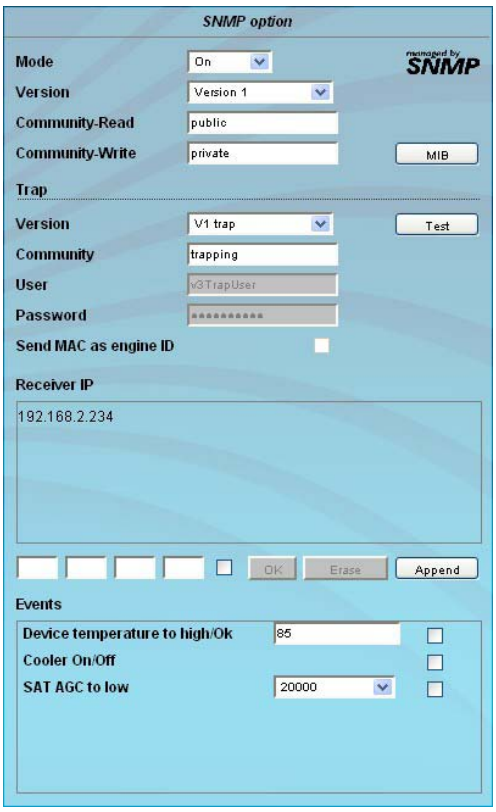
By pressing the “Info“ button the automatically assigned network configuration of the module is displayed.



If the module is set as **“DHCP-Server“** note, that the IP address 192.168.1.100 should not be set. If you select this address, you will get an error message. In addition to the IP settings you can configure the DHCP range from which the IP addresses of the connected clients are assigned. The address range must match the address range according to IP address and subnet mask of the server and should not be too small. The default is the area 192.168.1.1 to 192.168.1.99. Along with the DHCP server will also set up a local DNS (Domain Name Server). To use it in full extend a connected PC/ laptop must be configured as a DHCP client. Especially on Windows is to be noted that not only the IP address, but also the DNS server address automatically is to relate.

If the module is configured as a DHCP server or client and the client has received an IP address successfully, so the module can be accessed via a web browser with a name. This name is composed of the prefix “sbl“ and the device number that is printed on the back of the module and on the packaging. For example, the device with the number 0123456 is be called under “sbl0123456“. Should there be problems with it among the local network conditions, so in these cases the domain is to add when you call. In the case that the above module is configured as a server, the call using the domain is then “sbl0123456.sbl“. If another DHCP server is used, for example, the server of the home network, ask your administrator for the domain name.

An example of the simplification of the configuration or operation of the head end via DHCP, is, that an SBL module is as a server, the remaining modules and the connected PC/ laptop are configured as a client. By calling the browser “dhcp.sbl“ the surface of the server module is loaded. If not already done so, now the head end can be read. So all connected components are found and listed. The head end can now be stored in the “Setup“ menu under the item “System administration“. In the head end overview can be changed quickly to the user interface of any other module by selecting the respective modules links.



SNMP option

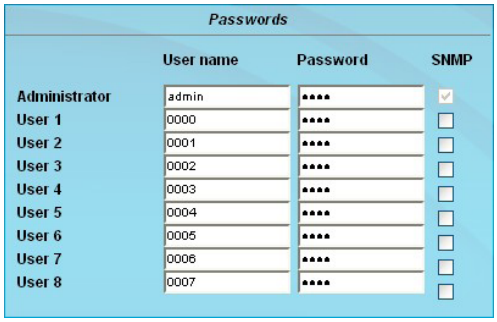
The SNMP adjustment is only available after the "SNMP" option was enabled (see chapter "Enabling of").
In the first section, the SNMP functionality, including the sending of traps is enabled or disabled with the "Mode" selection field. With the selector "Version" you can select the SNMP version (version 1, 2 or 3). In the two boxes below it, the communities for versions 1 and 2 are given separately for reading and writing via SNMP. In version 3, these two fields are disabled. There, all registered users of the module (see menu "Passwords") have an automatic read access to SNMP. The write access can be enabled or disabled for each user by clicking the SNMP-click
box in the "Passwords" menu.
By clicking the "MIB" button the MIB of the module is generated and can be stored.

In the second section the trap settings are done. First, the trap version is selected:
V1 trap - normal traps according SNMPv1 with specified community
V2 trap - normal traps according SNMPv2 with specified community
V2 inform - sends information traps according SNMPv2 and waits for an acknowledgment
V3 trap - normal traps according SNMPv3
V3 inform - sends information traps according SNMPv3 and waits for an acknowledgment

The community can be configured for traps of SNMP versions v1 and v2. User/ password and use the network MAC address as the engine ID can be configured for traps of SNMP version v3. These settings must correspond with the configuration of the trap receiver, so traps are successfully transferred. For this purpose a test trap can be sent by clicking the button "Test" to test the transmission of traps. If a test trap triggered, all pre-preserved traps discarded.

There up to 256 IP addresses to receive the traps can be created or enabled. These are listed under "Receiver IP". Below, the events can be configured, whether and partly with what thresholds they should trigger traps. There are three ways to configure a trap:
- without parameters, e.g. fan on/ off
- with a freely selectable parameters for a medium priority
- with a selectable parameter from a list for a medium priority

References and notes:
All users are supposed to work with SNMPv3 must use passwords with at least 8 characters. For SNMPv3 the SBL supports only the authentication password, not the privacy password. The SBL only supports the MD5 algorithm for authentication password in SNMPv3.
Information traps are specific traps that are possible up to SNMPv2. If there is no acknowledgment of the receiver, the transmitter attempting to transmit later again, until the confirmation is received.
A SBL-module holds up to 256 before information traps that could not be sent successfully. If there are more waste traps, the earlier traps are discarded and noted in the logbook as having failed. A successful sent trap is also registered as such in the logbook. In case of power failure or reboot of the module reproached traps are lost.
Details may be found in the help text for each event. The critical priorities are each covered with fixed values that can not be changed.
If the web site of PALIOS-IPM2 module is open, no changes are possible via SNMP.



Passwords

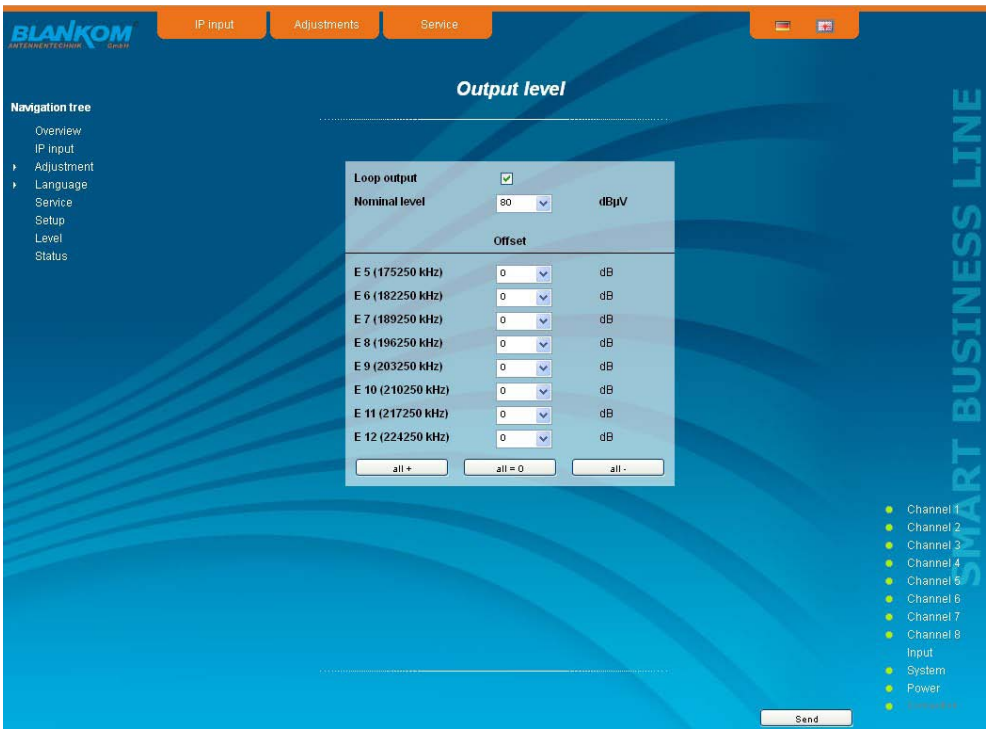
Again, this setting appears only when you are logged in as administrator, giving it the authority to make administrative changes. In addition it must be clicked the box "User and keyword check" in the submenu "GUI settings". The user ID and password for the administrator can be set in then the first line. The fixing of up to 8 user identification and passwords-is possible. The limitations of user rights exist only in the fact that they are not authorized to change web server settings, user rights and password changes and default settings.
The **default password** for the **admin** is: 1111
and for the **users**: 0000
If the SNMP option is enabled, after each user appears an SNMP-click box. By clicking on the box, the writing rights for individual users can be awarded for the SNMP version 3 (see also section SNMP option).

7.2.6 Menu "Service"

In this menu you will find all information about the service/ support for the PALIOS-IPM2 module. There are given the BLANKOM service hotline and the service email address. In addition, the implemented operating instructions may be called as a PDF. If there is an internet connection the BLANKOM homepage can be started. There, the latest software release or descriptions are available. Finally, the currently installed software release appears.

7.2.7 Menu "Level"

First you choose with the top box, if you would like to use the loop through output (loop) or not. If so, the underlying selection of the nominal level for all 8 channels may be set in the range from 62 ... 82 dBµV. If the loop is disabled, the output level of the 8 channels may be set in the range of 76 ... 94 dBµV. Below each channel can be set individually with an offset of +3 ... -6 dB in 0.5 dB steps. The three lower buttons are used to simplify the offset level setting if you want to perform same adjusting for all 8 channels. With the left button the offset for all 8 channels is increased by 0.5 dB, decreased with the right button by 0.5 dB. The offset is set for all 8 channels to 0 dB with the middle button.



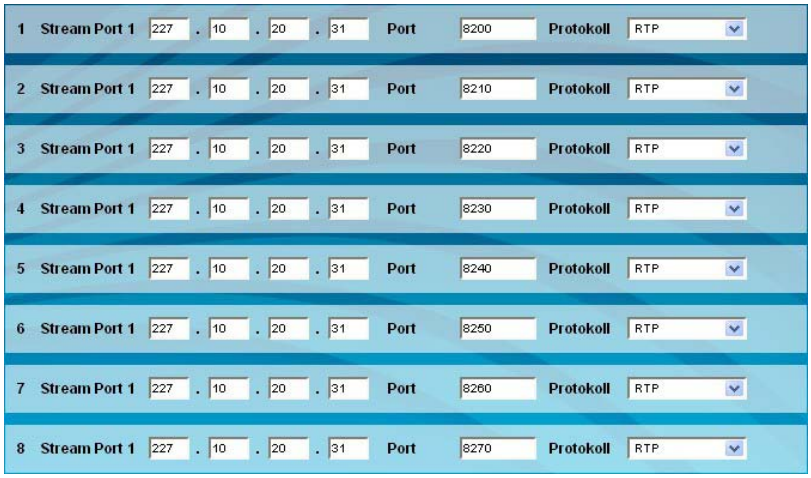
7.2.8 Menu ”Status”

It presents an overview of the status of the various components per channel, which is updated every 5 seconds. It lists only the current values, the naming of the parameter appears in the help box in the lower part of the user interface or in the status bar of the browser (as adopted configuration), if you approach the mouse cursor to the parameter. The listing is in 2 groups: modulators, and system. With the selection box at the top right you determine whether you have an overall view or only one of the 2 groups is listed.

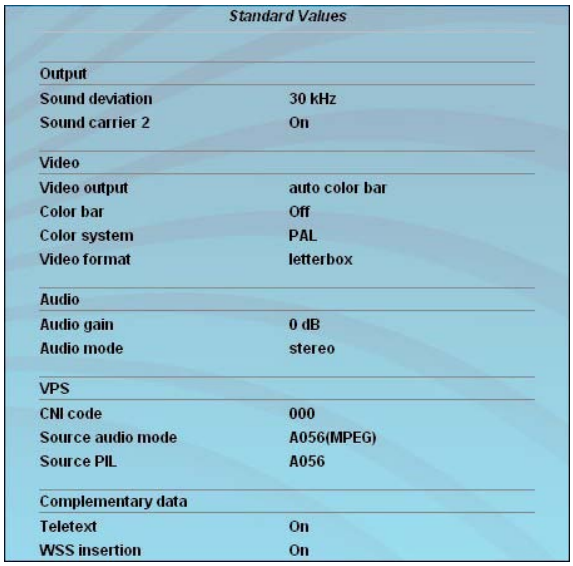
8. Factory settings

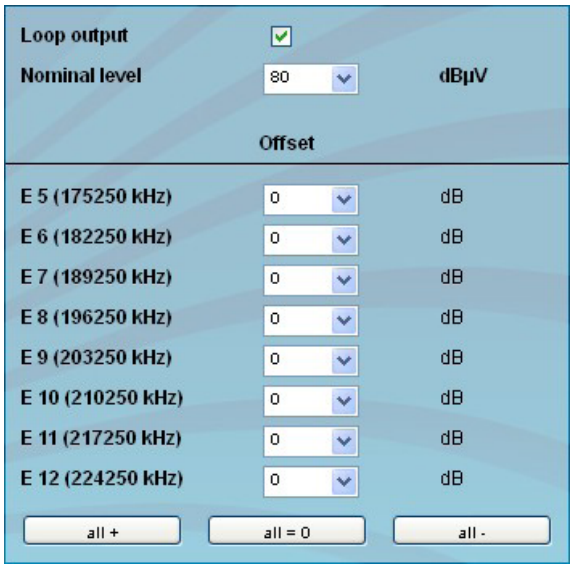
A short pressing of the reset button on the front of the module causes a reboot, i.e. the module restarts and all stored values are adjusted. If the module is to be reset to factory settings, the reset button must be pressed so long to keep up until the “POWER“ and “SYSTEM“ LED will illuminate green permanently again. This process takes about 15 seconds. In this case the module is set to the following:

Input parameters

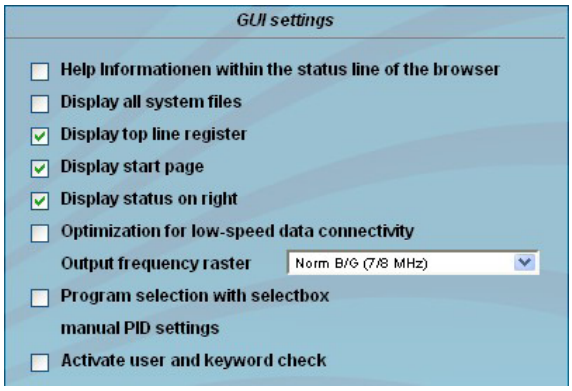


Output parameters



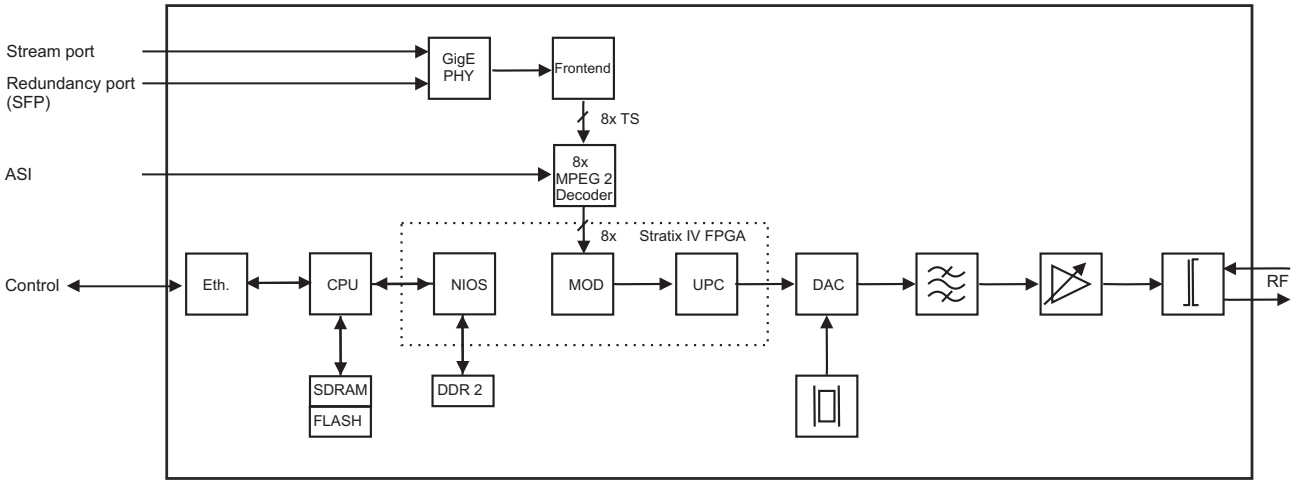


Setup settings

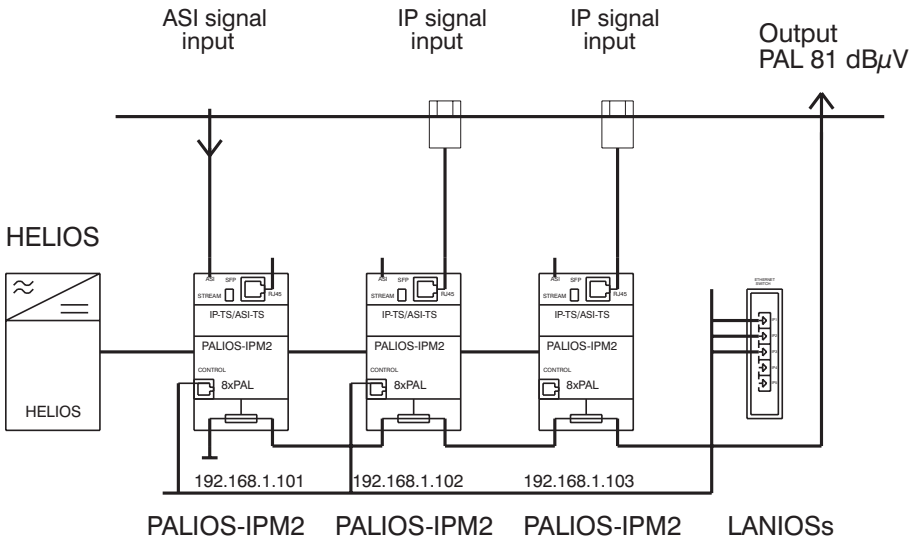


Network settings

9. Block diagram



10. Application example



11. Technical data

IP input (stream port)		
Netzwerkanschluss (LAN/ WAN)		Ethernet,10/ 100/ 1000 Base-T
Connector		1x RJ 45, 1x SFP (redund. interface)
Protocols		ARP, IGMPv3, UDP, RTP
ASI input		
Level range		200 … 880 mV_{pp}
Data rate		270 Mbps
Connector		BNC socket
Impedance		75 Ω
ASI polarity		regular/ inverted
ASI signal processing		
Data rate		0.625…75 Mbps
ASI transfer format		continuous, burst
TS transfer format		188, 204 Byte
Signal processing		EN 50083-9 [1]
MPEG decoder		
Video		MPEG-2 MP@HL
Audio		Audio description, MPEG-1 Layer 1&2
TV output		
TV standard		B/G, D/K
Sound type		double carrier FM
Sound carrier frequencies		
	B/G	5.5/ 5.742 MHz
	D/K1	6.5/ 6.25 MHz
	D/K2	6.5/ 5.742 MHz
	D/K3	6.5/ 6.742 MHz
		(each above picture carrier)
Sound mode		mono/ stereo/ dual/ auto (VPS controlled)
Audio deviation 1 mono carrier		30/ 50 kHz
Audio deviation 2 mono carrier		30 kHz
Audio deviation dual sound		30 kHz
Output frequency range		45 ... 862 MHz
Tuning step		125 kHz
Max. output level		85 dBµV (per channel)

Total level settings	
without loop	76 ... 94 dBµV (1 dB steps)
with loop	62 ... 82 dBµV (1 dB steps)
Individual level settings (offset)	+3 ... -6 dB (0.5 dB steps)
Channel allocation	adjacent channel ability
Connector	F socket
Impedance	75 Ω
Return loss	≥ 18 dB 45 MHz - 1.5 dB/ octave
Signal quality	
C/N in channel (BW = 4,8 MHz)	≥ 65 dB
S/N ratio parallel sound (unweighted/ weighted)	≥ 65/ 60 dB
Spurious 45...862 MHz	≥ 60 dB
Max. frequency stability	30 kHz
Output level stability	± 0.5 dB
Operating parameters	
Voltage/ current	12 V ± 0.2 V/ max. 2.5 A
Residual ripple of the supply voltage	10 mV_{pp}
Environmental conditions	
Temperature range	-10 ... +55 °C
Temperature range for data keeping	5 ... 45 °C
Relative humidity	≤ 80 % (non condensing)
Method of mounting	vertical
Location of mounting	splash-proof and drip-proof
Miscellaneous	
Dimensions (l x w x h)	46 x 262 x 167 mm
Weight	1,550 g
Delivery content	1x supply cable 1x network cable 2x F connecting cable 140 mm 2x terminating impedance 1x DIN rail clip 1x mounting accessories

12. Glossary

AM	**A**mplitude **m**odulation
ARP	**A**ddress **R**esolution **P**rotocol
ASI	**A**synchronous **S**erial **I**nterface
ATV	**A**nalogue **Tel**e**v**ision
BISS	**B**asic **I**nteroperable **S**crambling **S**ystem
BISS-E	**B**asic **I**nteroperable **S**crambling **S**ystem with **E**ncrypted keys
CNI	**C**ountry and **N**etwork **I**dentification
DVB	**D**igital **V**ideo **B**roadcasting (-C Cable, -S Satellite, -S2 Satellite 2, -T Terrestrial)
FPGA	**F**ield **P**rogrammable **G**ate **A**rray
GbE	**G**iga**b**it-**E**thernet
GUI	**G**raphical **U**ser **I**nterface (grafische Benutzeroberfläche)
HD(TV)	**H**igh **D**efinition (**Tel**e**v**ision)
HTTP	**H**ypertext **T**ransfer **P**rotocol
ID	**Id**entifier
IF	**I**ntermediate **F**requency
IGMP	**I**nternet **G**roup **M**anagement **P**rotocol
IIC	**I**nter-**I**ntegrated **C**ircuit (geräteinterner Datenbus)
IP	**I**nternet **P**rotocol
LED	**L**ight **E**mitting **D**iode
LNB	**L**ow **N**oise **B**lock
MAC	**M**edia **A**ccess **C**ontrol
MPEG	**M**oving **P**icture **E**xperts **G**roup
Nios	product name for a processor

NIT	**N**etwork **I**nformation **T**able
PCR	**P**rogram **C**lock **R**eference
PID	**P**rogram **Id**entifier
RF	**R**adio **F**requency
SFP	**S**mall **F**orm-factor **P**luggable
SNMP	**S**ingle **N**etwork **M**anagement **P**rotocol
TS	**T**ransport **S**tream
VBI	**V**ertical **B**lanking **I**nformation
VPS	**V**ideo **P**rogramming **S**ystem
WSS	**W**ide **S**creen **S**ignalling

13. Bibliography

[1] EN 50083-9: Cabled distribution systems for television, sound and interactive multimedia signals, part 9: Interfaces for CATV/SMATV head ends and similar professional equipment for DVB/MPEG-2 transport streams

[2] EN 60728-11: Cable networks for television signals, sound signals and interactive services Part 11: Safety (IEC 60728-11:2005); German version EN 60728-11:2005

[3] EN 50083-2 : Cabled distribution systems for television and sound signals. Electromagnetic compatibility for equipment; EN 50083-2:2001

[4] RFC 1157 Request for Comments (RFC): RFC Database URL: Http://www.rfc-editor.org/rfc.html

14. Document history

Version	Date	Modification	Author
1.00	26.07.2012	preliminary version	Häußer
1.01	20.09.2012	revision	Häußer

Options available upon request. Subjects to changes due to technical progress.

CE Declaration of Conformity

The Manufacturer

BLANKOM Antennentechnik GmbH · Hermann-Petersilge-Str. 1 · 07422 Bad Blankenburg · Germany

herewith declares the conformity of the product

Product name:	IP-/ ASI-TV Transmodulator
Type:	PALIOS-IPM2
Product number:	5105.01

according to the following regulations

EN 50083-2 [3]
EN 60728-11 [2] (as far as relevant)

and additional device-specific regulations, enclosed above, which this product is subjected to.

Date: 26.07.2011

Signature:

Dr. Piero Kirchner
(Managing Director)